

# **The Economic Impact of West Virginia University 2003-2004<sup>1</sup>**

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<sup>1</sup> This report is an update of a previous report on the same topic in May 1999. This study is designed so that annual updates will be more cost effective in subsequent years. The study utilizes significant financial and other data provided by various units associated with West Virginia University. The authors wish to acknowledge the assistance of the following individuals in the preparation of this report: Jennifer Fisher, Narvel G. Weese, Jr., Daniel A. Durbin, Dan Stalnaker, Brenda Thompson, Kathy Day, Rick King, Carol Kayla, Linda Strawser, Gary Rogers, and Stephen Douglas.

## **EXECUTIVE SUMMARY**

The contributions of land-grant institutions to their states are diverse and extensive. As West Virginia's largest land-grant institution, West Virginia University (WVU) has developed extensive teaching, research, service, and economic development programs benefiting West Virginia residents. Many of the program benefits are quantifiable; however, there are a number of programs whose benefits are neither immediately apparent nor easily quantified. This study focuses on one directly measurable benefit associated with WVU's operation - the economic impact of its expenditures on the West Virginia economy.

The economic impacts presented in this report are for the fiscal year 2004 (July 1, 2003 — June 30, 2004). The impacts were estimated using WVU and affiliated organizations' financial statements and the IMPLAN input-output modeling system. Among the economic impacts estimated are business volume, employment, employee compensation, and assorted state taxes.

Highlights of the fiscal year 2004 total economic impacts (direct, indirect, and induced) of WVU include:

- Total number of jobs created was 28,603
- Total business volume generated was \$2.0 billion
- Total employee compensation generated was \$818.5 million
- Total assorted state taxes (consumer sales, personal income, corporate net income, and business franchise) resulting from WVU was \$46.1 million.

## INTRODUCTION

As West Virginia's largest land-grant institution, West Virginia University (WVU) not only provides education to undergraduate and graduate students, it also provides substantial professional and work force development training. WVU has developed extensive teaching, research, service, and economic development programs benefiting West Virginia residents. Many of the benefits are quantifiable; however, there are a number of WVU programs whose benefits are neither immediately apparent nor easily quantified. This report estimates the economic value of those benefits. More specifically, this study focuses on one directly measurable benefit associated with WVU's operation - the economic impact of its expenditures on the West Virginia economy.

This report is an update of a previous report on the same topic published in 1999, confirming the advances made by WVU in the last six years. Since 1998 WVU has made significant changes in its programs, expanding various academic facilities and increasing the number of students enrolled. Between Fall 1997 and Fall 2003 the enrollment increased by over 2,000 students (9.1 percent) on the WVU main campus alone, while it increased slightly on the regional campuses. This report analyzes the economic impact during fiscal year 2004 (July 1, 2003 to June 30, 2004).

Similar to the previous report, this current report examines both WVU and its affiliated organizations. Table 1 describes both organizations in detail. However, unlike the previous report, this current report excludes WVU at Parkersburg Foundation and WVU Tech Foundation due to the lack of information. Note also that as in the 1999 report other WVU related organizations were excluded from this study, including Chestnut Ridge Psychiatric Hospital, Health South Rehabilitation Hospital, United Hospital Center, and West Virginia Network for Educational Telecomputing (WVNET).

**Table 1**  
**Scope of Institutions Covered in the Study**

<b>West Virginia University</b>	<b>Affiliated Organizations</b>
WVU Main Campus (Morgantown)	WVU Hospitals Inc. (Ruby)
WVU Institute of Technology	University Health Associates
WVU Parkersburg	NASA (WVU Portion Only)
Potomac State College	WVU Alumni Association
WVU Research Corporation	
WVU Foundation Inc.	

The focus of the study is on the direct, indirect, and total economic impacts WVU and affiliated organizations had on the West Virginia economy. Total purchases by these organizations include the annual operating purchases and annualized major capital expenditures<sup>2</sup>. In addition, purchases by WVU faculty, staff, students, and visitors of students are considered in the analysis. Through these direct expenditures and employment, additional expenditures and employment are generated via economic multipliers from suppliers' and employees' re-spending within the West Virginia economy.

The economic multipliers used in this report are provided by the IMPLAN input-output modeling system, a nationally recognized modeling software and data system. The use of IMPLAN in this project permits estimation of the indirect and total economic impacts on business volume, employee compensation, employment and value added. Using these results BBER estimates the impacts of WVU and affiliated organizations on the West Virginia economy. Among the impacts estimated are personal income, corporate net income and business franchise, and sales tax revenues generated from the operation of WVU and affiliated organizations.

## **THE CURRENT SETTING**

WVU has a major impact on the state of West Virginia through its education, research, service, and economic development programs. The main campus in Morgantown offers 168 degree programs including bachelor, master, doctorate and first professional degree programs. Additional certificate, associate, bachelor, and master degree programs are offered through the regional campuses in Keyser, Montgomery, and Parkersburg. WVU also extends its education beyond its traditional campus using both satellite and distance learning technology.

WVU's educational services go beyond formal degree programs. WVU's commitment to workforce development has resulted in a number of open enrollment and customized training programs which address the needs of West Virginia employers. WVU provides the greatest research resource for West Virginia businesses, industry, government, and the public. Research expertise spans areas from coal mining to forensics, from historic preservation to economic forecasts, from biomedical engineering to timber bridges, and from geographical information systems to Appalachian history and culture. As the leading recipient of federal, state, and private research funds in the state, WVU generates substantial economic activity just from its research purchases. Increasingly the research is resulting in intellectual property which is being commercialized through technology transfer. The end result is the creation of additional employment opportunities for West Virginia-based businesses.

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<sup>2</sup> Rather than using the actual major capital expenditures during the fiscal year, the study uses a three year average of actual capital expenditures in the estimation of the economic impact. This smoothes large year-to-year variations in capital spending and makes the estimated impacts more representative of WVU's operations. Capital expenditures for WVU include capital funding appropriated through the Board of Trustees for projects at WVU's main campus.

Employment at WVU for fiscal year 2004 was 11,988 full-time and part-time jobs (Table 2) while at WVU and its affiliated organizations it was 16,642.

**Table 2**  
**Employment at WVU and Affiliated Organizations, Fiscal Year 2004**

<b>Institution</b>	<b>Employment</b>
<b>West Virginia University*</b>	
Main Campus and Regional Campuses	11,927
WVU Foundation	61
Subtotal – WVU	11,988
<b>WVU Affiliated Organizations</b>	
WVU Hospitals Inc. (Ruby)	3,590
University Health Associates	1,052
WVU Alumni Association	12
Subtotal – WVU Affiliated Organizations	4,654
<b>Total Employment</b>	<b>16,642</b>

Note: \*Employment at WVU includes regular full-time & part-time employees, construction workers, and student workers in WVU main campus and regional campuses.

Student enrollment at WVU and the regional campuses was 31,733 for the Fall 2003 semester (Table 3). Estimated student budgets for these students ranged from a low of \$6,738 for resident students at WVU Parkersburg to a high of \$21,308 for non-resident students enrolled at the WVU main campus (Table 4).

**Table 3**  
**Student Enrollment at West Virginia University, Fall 2003**

<b>Campus Location</b>	<b>Headcount</b>
WVU Main Campus	24,260
Potomac State College	1,330
WVU Parkersburg	3,755
WVU Institute of Technology	2,388
<b>Total Student Enrollment</b>	<b>31,733</b>

**Table 4**  
**Student Expense Budgets Fiscal Year 2004**

<b>Campus Location &amp; Status</b>	<b>Estimated 9-Month Expenses</b>
<b>WVU Main Campus</b>	
Resident Students Living on Campus	13,186
Resident Students Living off Campus	9,332
Resident Students Living at Home	9,250
Non-Resident Students Living on Campus	21,308
No-resident Students Living off Campus	17,454
<b>Potomac State College</b>	
Resident Students Living on & off Campus	9,160
Resident Students Living at Home	7,550
Non-resident Students Living on & off Campus	14,494
Non-resident Students Living at Home	12,884
<b>WVU Parkersburg</b>	
Resident Students Living off Campus	9,552
Resident Students Living at Home	6,738
Non-Resident Students Living off Campus	13,506
No-resident Students Living at Home	10,722
<b>WVU Institute of Technology</b>	
Resident Students Living on Campus	11,712
Resident Students Living off Campus	13,202
Resident Students Living at Home	9,002
Non-Resident Students Living on Campus	17,148
No-resident Students Living off Campus	18,609

Note: This budget includes tuition fee but excludes expenses in the summer semester. Both the economic impact of tuition fees and room-and-board expenses of students living in school dorms have been included in the economic impact of WVU.

## ECONOMIC IMPACT OF WVU AND AFFILIATES

The economic contributions of WVU and affiliated organizations are significant. Their total economic impact on the West Virginia economy was \$2,017.7 million of business-volume in fiscal year 2004 (Table 5). This business volume generated more than \$818.5 million in employee compensation in the state and accounted for 28,603 jobs in West Virginia. WVU and affiliated organizations' activities generated an estimated \$46.1 million of tax revenue for the state through consumer sales tax, personal income tax, corporate net income tax, and business franchise tax.

**Table 5**  
**Economic Impact of West Virginia University and Affiliated Organizations**  
**on the West Virginia Economy, Fiscal Year 2004**

Type of Economic Impact	Direct Economic Impact	Indirect Economic Impact	Total Economic Impact
Business Volume (\$million)	987.8	1,029.8	2,017.7
Employee Compensation (\$million)	587.7	230.8	818.5
Employment (jobs)	16,642	11,961	28,603
Assorted State Taxes (million\$)	-	-	46.1

Note: Numbers may not sum due to rounding. State taxes include consumer sales, personal income, corporate net income, and business franchise.

## LIMITATIONS TO THE ECONOMIC IMPACT STUDY

Any economic impact study has limitations which should be noted by the reader. These are listed as follows:

1. The list of affiliated organizations is not exhaustive of those associated with WVU. Organizations omitted due to the lack of information include WVU at Parkersburg Foundation Inc., WVU Tech Foundation, Inc., Chestnut Ridge Psychiatric Hospital, Health South Rehabilitation Hospital, and United Hospital Center. Furthermore, prior studies included the entire expenditures of the West Virginia Network for Educational Telecomputing (WVNET), while only those expenditures or transfers directly made by WVU to WVNET were included in this study.
2. WVU faculty, staff and students and employees of affiliated organizations have numerous visitors during the course of the year. While the impacts of student visitors are included in this study, no estimates are provided of the economic contributions of faculty and staff visitors or for visitors to athletic events, cultural activities, lectures, hospitals, and other programs and services provided by WVU and its affiliated organizations. The omission of the economic contributions of these visitors means that the estimated impacts underestimate the economic contributions of the institution to West Virginia.
3. Similar to the previous study, estimates were not made of the impacts on financial institutions such as interest-and non-interest bearing accounts. Due to continued deregulation of financial institutions and changes in geographically based statistical reports on financial institutions, it was deemed to be very difficult to ascertain an estimate of this impact.
4. The results from this economic impact study are not necessarily comparable with those from studies of other institutions. In part, this may be due to differences in impact methodology and the regional focus of the studies. Other differences could be attributable to accounting conventions, failure to remove double counting of transfers, and errors in judgment. The research team has clearly documented its methodology so that future updates will result in comparable statistics.
5. Many economic contributions of a complex higher education organization are only realized after the year in which the expenditures are made. In cases where WVU research leads to intellectual property which transferred to private job creating businesses in West Virginia, the impacts are realized in a future year and may well continue or expand over time. Services provided by WVU units which enhance the productivity of existing business and lead to the retention of jobs which would otherwise be lost are not 'captured' within this research methodology. Finally, the greatest long term economic impact from education and medicine is the expansion in the stock and quality of human capital available for employment. It is well documented that investments in human capital result in excellent rates of return to individuals and society.



## APPENDIX: IMPACT DEFINITIONS

Assorted Taxes:	West Virginia state revenues from consumer sales tax, personal income tax, corporate net income tax, and business franchise tax.
Business Volume:	Sales plus net increase in finished inventories and the value of intra-corporate shipments. Equals output (see below) plus cost of goods sold in retail and wholesale trade.
Employment:	The number of jobs in a business, industry, or region. Also the number of jobs attributable to an impact (see below). This is a measure of the number of full-time and part-time positions, not necessarily the number of employed persons. Annual average by place of work unless otherwise stated.
Employee Compensation:	Wages and salaries plus employers' contribution for social insurance (social security, unemployment insurance, workers compensation, etc.) and other labor income (pension contributions, health benefits, etc.). By place of work unless otherwise stated.
Impacts:	The results of the recirculation of funds throughout a regional economy due to the activity of a business, industry, or institution. Estimated by tracing back the flow of money through the initial businesses' employees and suppliers, the businesses selling to the employees and suppliers, and so on. Thus, they are a way to examine the distribution of industries and resources covered in the costs of the initial activity.
Output:	For most sectors, measured as sales plus net inventories and the value of intra-corporate shipments. For retail and wholesale trade, measured as gross margins (i.e. mark-ups on goods sold).
Value Added:	A measure of the value created by a business or industry, or attributable to an impact (see above). Equal to value of production minus the cost of purchased goods and services. Also equal to employee compensation plus capital income (profits, interest paid, and depreciation charges) and indirect business taxes (e.g. severance, excise). Corresponds to the aggregate concepts of gross domestic product (GDP) and gross state product (GSP).